

*Laminaria***Antioxidative activity of animal and vegetable dietary fibers**

Suzuki N, Fujimura A, Nagai T, Mizumoto I, Itami T, Hatate H, Nozawa T, Kato N, Nomoto T, Yoda B

BIOFACTORS

21 (1-4): 329-333 Sp. Iss. SI 2004

Document type: Article **Language:** English

Abstract:

Some dietary fibers originated from insects such as silkworm (Sericin) and others along with constituents of several representative seaweeds such as wakame *Undaria pinnatifida*; hijiki *Hizikia fusiforme*; and kombu *Laminaria japonica*, were found to have fairly large reaction rates determined by quenching experiments of emission spectra in the near-infrared region $\lambda(\text{max})$ 1270 nm for singlet oxygen $\text{O-1}(2)$, Cypridina luminescence method for superoxide, and peroxide value (POV) for autoxidation. The determined reaction rates are between $10(3) - 10(5) \text{ (g/L)}^{-1} \text{ s}^{-1}$ for the insect and the plant dietary fibers; the larger ones are as large as that of ascorbic acid, $1.93 \times 10(4) \text{ (g/L)}^{-1} \text{ s}^{-1}$ for singlet oxygen. Most of these seaweed constituents also showed antioxidative activity against autoxidation and superoxide as well as their immunological enhancing activity. These results suggest a possibility that dietary fibers that are supposed to prevent the large-intestine **cancer** by their physical properties may prevent the **cancer**, at least in parts, by their chemical, antioxidative activity.